ABSTRACT OF THE DISCLOSURE

A method of identifying nucleic acid samples comprising: providing a mircoarray including a substrate coated with a composition including a population of micro-spheres dispersed in a fluid containing a gelling agent or a precursor to a gelling agent and immobilized at random positions on the substrate, at least one sub-population of said population micro-spheres containing an optical barcode generated from at least one colorant associated with the micro-spheres and including a nucleic acid probe sequence; contacting said array with a target nucleic acid sequence; and detecting the color barcode of said sub-population of micro-spheres due to the interaction of said probe nucleic acid sequence and said target nucleic acid sequence.